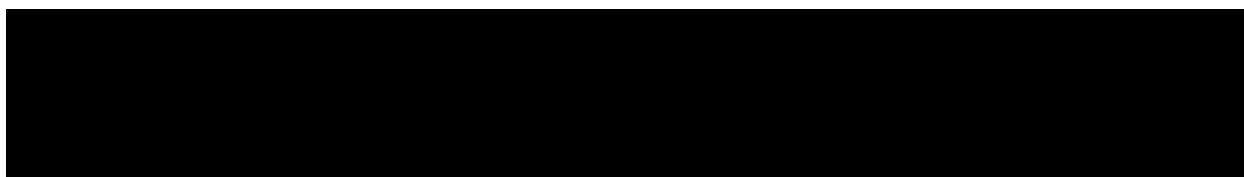


**CONFIDENTIAL**



**EXHIBIT C**

1 IN THE UNITED STATES DISTRICT COURT

2 FOR THE EASTERN DISTRICT OF TEXAS

3 MARSHALL DIVISION

4 ENTROPIC COMMUNICATIONS,

5 LLC,

6 Plaintiff,

Case No.

7 vs.

2:22-cv-00125-JRG

8 CHARTER COMMUNICATIONS,

9 INC.,

10 Defendant.

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13  
14 REMOTE VIDEO DEPOSITION OF

15 RICHARD A. KRAMER

16  
17  
18 August 24, 2023

19 10:08 a.m. Central

20  
21  
22  
23 Stenographically Reported By:

24 Deanna Amore - CRR, RPR, CSR - 084-003999

<p style="text-align: right;">Page 2</p> <p>1 APPEARANCES OF COUNSEL (All Participants Appeared Remotely.)</p> <p>2 On Behalf of the Plaintiff, ENTROPIC</p> <p>3 COMMUNICATIONS, LLC:</p> <p>4 K&amp;L GATES LLP</p> <p>5 CONNOR MEGGS</p> <p>6 70 West Madison Street</p> <p>7 Suite 3300</p> <p>8 Chicago, Illinois 60602</p> <p>9 connor.meggs@klgates.com</p> <p>10 On Behalf of the Defendant, CHARTER COMMUNICATIONS,</p> <p>11 INC.:</p> <p>12 ARNOLD &amp; PORTER</p> <p>13 MARC COHN</p> <p>14 601 Massachusetts Avenue NW</p> <p>15 Washington, D.C. 20001</p> <p>16 marc.cohn@arnoldporter.com</p> <p>17 ALSO PRESENT:</p> <p>18 Tim Tupiak, Legal Videographer</p> <p>19 Matthew Laurence, Concierge-Technician</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 4</p> <p>1 EXHIBITS</p> <p>2 NUMBER DESCRIPTION PAGE</p> <p>3 Exhibit 9 Li - U.S. Patent 9</p> <p>4 Application 2007/0098089;</p> <p>5 CHARTER_ENTROPIC00035923-</p> <p>6 939</p> <p>7 Exhibit 10 Dauphinee U.S. Patent 9</p> <p>8 7.522.901;</p> <p>9 CHARTER_ENTROPIC00380676-</p> <p>10 681</p> <p>11 Exhibit 11 8.11.2023 Expert Rebuttal 9</p> <p>12 Report of Richard A.</p> <p>13 Kramer</p> <p>14 Exhibit 12 Errata to Expert Report 10</p> <p>15 of Dr. Richard A. Kramer</p> <p>16 Exhibit 13 Asserted Patents Claim 11</p> <p>17 Language</p> <p>18 Exhibit 14 7.12.2023 Deposition 83</p> <p>19 Transcript of Curtis</p> <p>20 Ling, Ph.D.</p> <p>21 Exhibit 15 October 1989 Networking 103</p> <p>22 Working Group Internet</p> <p>23 Engineering Task Force;</p> <p>24 ENTROPIC_CHARTER0018562-</p> <p>25 677</p>
<p style="text-align: right;">Page 3</p> <p>1 INDEX</p> <p>2 WITNESS EXAMINATION</p> <p>3 RICHARD A. KRAMER</p> <p>4 EXAMINATION BY MR. COHN 6</p> <p>5 EXAMINATION BY MR. MEGGS 133</p> <p>6 EXHIBITS</p> <p>7 Exhibit 1 U.S. Patent 8,223,775 8</p> <p>8 Exhibit 2 U.S. Patent 9,210,362 8</p> <p>9 Exhibit 3 Richard Kramer Curriculum 8</p> <p>10 Vitae</p> <p>11 Exhibit 4 Materials Considered to 8</p> <p>12 Expert Report of Dr.</p> <p>13 Richard Kramer</p> <p>14 Exhibit 5 Dong - U.S. Patent 8</p> <p>15 Application 2004/0160945;</p> <p>16 CHARTER_ENTROPIC00381592-</p> <p>17 1607</p> <p>18 Exhibit 6 Brooks - U.S. Patent 9</p> <p>19 Application 2001/0039600;</p> <p>20 CHARTER_ENTROPIC00217633-</p> <p>21 -646</p> <p>22 Exhibit 7 Zhang - U.S. Patent 9</p> <p>23 6,704,372</p> <p>24 Exhibit 8 Favrat U.S. Patent 9</p> <p>25 7,265,792</p>	<p style="text-align: right;">Page 5</p> <p>1 THE VIDEOGRAPHER: Good morning. We are going</p> <p>2 on the record. The time is 10:08 a.m. Central Time</p> <p>3 on August 24, 2023.</p> <p>4 Quality of recording depends on quality of</p> <p>5 camera and Internet connection of participants.</p> <p>6 What is heard from the witness and seen on the</p> <p>7 screen is what will be recorded.</p> <p>8 Audio and video recording will continue to</p> <p>9 take place unless both parties agree to go off the</p> <p>10 record. 10:08:18</p> <p>11 This is Media Unit No. 1 in the</p> <p>12 video-recorded deposition of Dr. Richard Kramer,</p> <p>13 taken in the matter of Entropic Communications, LLC</p> <p>14 versus Charter Communications, Incorporated, filed</p> <p>15 in the United States District Court for the</p> <p>16 Eastern District of Texas Marshall Division,</p> <p>17 Case No. 2:22-cv-00125-JRG.</p> <p>18 My name is Tim Tupiak. I'm the</p> <p>19 videographer. The court reporter is Deanna Amore.</p> <p>20 We are both with the firm Veritext Legal Solutions. 10:08:53</p> <p>21 I am not related to any party in this</p> <p>22 action, nor am I financially interested in the</p> <p>23 outcome.</p> <p>24 If counsel will now state their</p> <p>25 appearances and affiliations for the record,</p>

2 (Pages 2 - 5)

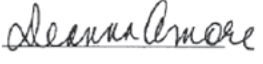
<p style="text-align: right;">Page 6</p> <p>1 beginning with the noticing attorney, after which</p> <p>2 the reporter will administer the oath.</p> <p>3 MR. COHN: This is Marc Cohn with</p> <p>4 Arnold &amp; Porter, in Washington DC, for the</p> <p>5 defendant.</p> <p>6 MR. MEGGS: Connor Meggs, of K&amp;L Gates, counsel</p> <p>7 for Entropic Communications, LLC.</p> <p>8 (Whereupon, the witness was</p> <p>9 duly sworn.)</p> <p>10 THE STENOGRAPHER: Thank you. 10:09:35</p> <p>11 You may proceed.</p> <p>12 RICHARD A. KRAMER,</p> <p>13 called as a witness herein, having been first duly</p> <p>14 sworn, was examined and testified as follows:</p> <p>15 EXAMINATION</p> <p>16 BY MR. COHN:</p> <p>17 Q. Good morning, Dr. Kramer.</p> <p>18 A. Good morning.</p> <p>19 Q. I understand you've given a number of</p> <p>20 depositions in the past. So I won't belabor the 10:09:55</p> <p>21 ground rules, but if you need a break or anything</p> <p>22 like that, please let me know. I tend to break at</p> <p>23 the top of the hour. So if you see it's the top of</p> <p>24 the hour, you can expect we'll take a break</p> <p>25 shortly. If you need water, coffee, anything like</p>	<p style="text-align: right;">Page 8</p> <p>1 A. That is correct, sir, yes.</p> <p>2 Q. All right. Now, I've premarked some</p> <p>3 exhibits. Let me just go through them for the</p> <p>4 record.</p> <p>5 Kramer Exhibit 1 is U.S. Patent 8,223,775.</p> <p>6 (Whereupon, Kramer Exhibit 1 was</p> <p>7 marked for identification.)</p> <p>8 MR. COHN: Kramer Exhibit 2 is U.S.</p> <p>9 Patent 9,210,362.</p> <p>10 (Whereupon, Kramer Exhibit 2 was</p> <p>11 marked for identification.)</p> <p>12 MR. COHN: Kramer Exhibit 3 is your CV.</p> <p>13 (Whereupon, Kramer Exhibit 3 was</p> <p>14 marked for identification.)</p> <p>15 MR. COHN: Kramer Exhibit 4 are additional</p> <p>16 materials considered in your rebuttal report.</p> <p>17 (Whereupon, Kramer Exhibit 4 was</p> <p>18 marked for identification.)</p> <p>19 MR. COHN: Kramer Exhibit 5 is the Dong prior</p> <p>20 art.</p> <p>21 (Whereupon, Kramer Exhibit 5 was</p> <p>22 marked for identification.)</p> <p>23 Mr. Cohn: Kramer Exhibit 6 is the Brooks prior</p> <p>24 art.</p> <p>25</p>
<p style="text-align: right;">Page 7</p> <p>1 that, it's important to me that you're able to</p> <p>2 focus and are comfortable. So if you need anything</p> <p>3 like that, let me know.</p> <p>4 A. Thank you.</p> <p>5 And, typically, if we are kind of in a</p> <p>6 groove, to respect your time and everyone's, I'm</p> <p>7 good to go more than an hour at first. As we both</p> <p>8 get tired, then I'll probably want to take breaks</p> <p>9 more often but thank you.</p> <p>10 Q. Okay. What did you do to prepare for 10:10:31</p> <p>11 today's deposition?</p> <p>12 A. I read my report. I read Dr. Goldberg's</p> <p>13 report. I read Dr. Almeroth's report.</p> <p>14 Q. Did you meet with counsel?</p> <p>15 A. Briefly. Two days, part-time only.</p> <p>16 Q. And how many hours were your total</p> <p>17 meetings with counsel to prepare for today?</p> <p>18 A. Not counting lunch, maybe, approximately,</p> <p>19 six hours. I could be off by an hour or two.</p> <p>20 Q. Roughly three hours twice? 10:11:12</p> <p>21 A. Roughly three to four, I would say, in</p> <p>22 that range.</p> <p>23 Q. And when you said you reviewed the expert</p> <p>24 reports, I assume you reviewed the documents cited</p> <p>25 in those reports; is that true?</p>	<p style="text-align: right;">Page 9</p> <p>1 (Whereupon, Kramer Exhibit 6 was</p> <p>2 marked for identification.)</p> <p>3 MR. COHN: Kramer Exhibit 7 is the Zhang prior</p> <p>4 art, Z-h-a-n-g.</p> <p>5 (Whereupon, Kramer Exhibit 7 was</p> <p>6 marked for identification.)</p> <p>7 MR. COHN: Kramer Exhibit 8 is the Favrat prior</p> <p>8 art.</p> <p>9 (Whereupon, Kramer Exhibit 8 was</p> <p>10 marked for identification.)</p> <p>11 MR. COHN: Kramer Exhibit 9 is Li prior art.</p> <p>12 (Whereupon, Kramer Exhibit 9 was</p> <p>13 marked for identification.)</p> <p>14 MR. COHN: Kramer Exhibit 10 is the Dauphinee</p> <p>15 prior art, D-a-u-p-h-i-n-e-e.</p> <p>16 (Whereupon, Kramer Exhibit 10</p> <p>17 was marked for identification.)</p> <p>18 MR. COHN: And Kramer Exhibit 11 is your August</p> <p>19 11, 2023 rebuttal expert report.</p> <p>20 (Whereupon, Kramer Exhibit 11</p> <p>21 was marked for identification.)</p> <p>22 MR. COHN: And for the record, I made these</p> <p>23 exhibit numbers match the exhibit numbers you used</p> <p>24 in your rebuttal report.</p> <p>25 There's two other exhibits here that</p>

3 (Pages 6 - 9)

<p style="text-align: right;">Page 14</p> <p>1 approximately 10. There's also been -- for  2 validity, I worked with the patent owners. Some of  3 those have been -- I have helped address just  4 giving my technical opinions during, like, the  5 patent owner response, and so some of those were  6 dealt with at that level, and then -- or I've  7 written testimony on behalf of the patent holder.  8 Q. In terms of your involvement in IPRs  9 before the patent office, how many times have you  10 rendered an opinion that patent claims were 10:20:02  11 unpatentable as opposed to patentable?  12 A. As far as the numbers of matters I worked  13 on, it's about 50/50 split. Again, some of this  14 stuff didn't see the light of day because -- but  15 the -- as far as the number of IPRs I've done, it  16 would probably be around maybe ten.  17 Q. Have you testified in front of a jury  18 before in a patent case?  19 A. No, sir, never.  20 (Stenographer clarification.) 10:20:45  21 THE WITNESS: I believe I said ten.  22 And that ten doesn't represent some things  23 that -- where there was never a declaration ever  24 issued. The ten -- there's a broader number than  25 ten where both for the patent owner and for the</p>	<p style="text-align: right;">Page 16</p> <p>1 these things.  2 The term "wideband" in the '362 patent is  3 not given a special definition in that patent; is  4 that correct?  5 A. What do you mean by "special definition"?  6 Q. Is there a passage of the '362 patent that  7 provides a definition of wideband?  8 A. As one skilled in the art in reading  9 wideband, there is the discussion about the fact  10 that, for example, in column 4, that the frequency 10:23:14  11 bandwidth spectrum could be any -- any portion.  12 In column 5, there's a discussion, for  13 example, with respect to bandwidth, UBWI, for  14 instance, the frequency spectrum, that it would be  15 understood that it could comprise all available  16 channels that exist in a license frequency spectrum  17 to provide system flexibility, and it can also be  18 all receivable channels within a geographical area.  19 So as one skilled in the art, one would  20 appreciate that wideband would include at least it 10:24:09  21 is a broader term than full band and would include  22 full.  23 Q. Wideband is not limited to full band.  24 That's correct; right?  25 A. Wideband is a broader term. It would</p>
<p style="text-align: right;">Page 15</p> <p>1 defendants where I've worked on other matters,  2 that's a broader number than ten. I don't know  3 what it is, but it's probably 50. I could be  4 wrong.  5 BY MR. COHN:  6 Q. All right. Let's look at the '362 patent,  7 No. 2.  8 A. Okay.  9 Q. This patent is titled "Wideband Tuner  10 Architecture." 10:21:55  11 Do you see that?  12 A. Yes, sir.  13 Q. And the term "wideband" is used in both  14 the specification and in the claims of this patent;  15 right?  16 A. For instance, it's in the title, and it's  17 in the claims, a wideband receiver system, and  18 it's, for instance, in the abstract.  19 Q. And when you say "in the abstract," you  20 don't mean conceptually, you mean in reality, it's 10:22:19  21 in a portion of the patent called the abstract; is  22 that correct?  23 A. On the front page of the patent, thank  24 you, Item No. 57.  25 Q. Aren't always as familiar as we are with</p>	<p style="text-align: right;">Page 17</p> <p>1 include full.  2 Q. And wideband would include bandwidth less  3 than full band; correct?  4 A. Under the umbrella it could include full  5 band. It could include something less than full  6 band.  7 Q. One of the examples given of widebands  8 within the '362 patent is 80 megahertz bandwidth;  9 is that correct?  10 A. Can you show me where? 10:25:10  11 Q. My browser just burped.  12 I believe it's column 2. I'm sorry. It's  13 column 4, approximately line 22. It says "In this  14 example, a number of available channels in BW1 is  15 assumed to be 10 with each channel occupies an  16 8 megahertz bandwidth for a total of 80 megahertz."  17 Do you see that?  18 A. I do see that.  19 Q. And the total of 80 megahertz is an  20 example of a wideband; is that right? 10:26:03  21 A. I think that's a good way of putting it.  22 It's an example.  23 Q. Would a bandwidth incoming to the system  24 described in the '362 patent of only 8 megahertz be  25 considered a wideband?</p>

5 (Pages 14 - 17)

<p style="text-align: right;">Page 86</p> <p>1 in that Q &amp; A that I just read; right?</p> <p>2 A. To the extent that Dr. Ling wasn't asked</p> <p>3 to consider the Court's claim construction and</p> <p>4 consider the claims, he was just simply giving his</p> <p>5 opinion related to figures.</p> <p>6 Q. You don't disagree with what he said --</p> <p>7 right? -- based on your analysis that the tuners 1</p> <p>8 and 2 in Figure 6 perform similar functions to the</p> <p>9 radio front end of the previous figures?</p> <p>10 A. I mean, it speaks for itself what it says. 14:15:07</p> <p>11 I really don't have an opinion.</p> <p>12 Q. You don't disagree with that answer of</p> <p>13 Dr. Ling; right?</p> <p>14 MR. MEGGS: Objection. Form.</p> <p>15 THE WITNESS: I didn't say that.</p> <p>16 BY MR. COHN:</p> <p>17 Q. Do you disagree with Dr. Ling when he said</p> <p>18 that --</p> <p>19 (Simultaneous speaking.)</p> <p>20 THE WITNESS: I don't have an opinion. I mean, 14:15:45</p> <p>21 it speaks for itself. He's entitled to have his</p> <p>22 own opinion and describe what he feels is his</p> <p>23 opinion.</p> <p>24 BY MR. COHN:</p> <p>25 Q. In the course of your analysis, did you</p>	<p style="text-align: right;">Page 88</p> <p>1 Dr. Goldberg's analysis of the invalidity of</p> <p>2 claim 11 in view of Zhang; right?</p> <p>3 A. It appears so, yes.</p> <p>4 Q. And in your response you see the</p> <p>5 subheading (a) refers to claim element 11a3. And</p> <p>6 then you quote the element?</p> <p>7 A. Yes.</p> <p>8 Q. And that element corresponds to</p> <p>9 element 11d in Kramer Exhibit 13 that you brought</p> <p>10 this morning; is that right? 14:19:00</p> <p>11 A. I think that's correct, yes.</p> <p>12 Q. And after this section on element 11d,</p> <p>13 your report then turns to the validity of claim 12;</p> <p>14 correct?</p> <p>15 A. So after this section, paragraphs 120</p> <p>16 including Subsections 121 through paragraphs 120 --</p> <p>17 forgive me -- paragraph 121 through paragraph 128,</p> <p>18 then starting with paragraph 129 is a12.</p> <p>19 Q. And in your -- in paragraphs 120 to 128 of</p> <p>20 your report, the only claim element that you 14:20:05</p> <p>21 discuss is what's labeled as element 11d on the</p> <p>22 chart you brought with you this morning; is that</p> <p>23 right?</p> <p>24 A. So the heading over paragraph 121 appears</p> <p>25 to correspond to what I have marked on my note</p>
<p style="text-align: right;">Page 87</p> <p>1 come to an opinion that the tuners 1 and 2 of</p> <p>2 Figure 6 perform different functions than the radio</p> <p>3 front end of the previous figures?</p> <p>4 MR. MEGGS: Objection. Form.</p> <p>5 BY MR. COHN:</p> <p>6 Q. Do you recall whether you gave that</p> <p>7 opinion or not?</p> <p>8 A. In my analysis I was rebutting</p> <p>9 Dr. Goldberg and Dr. Almeroth's reports.</p> <p>10 I disagree with their opinions. I was focused on 14:16:34</p> <p>11 the claims, the evidence they provided. I didn't</p> <p>12 go through people's transcripts line by line</p> <p>13 forming opinions. I don't have one.</p> <p>14 Q. Now, if we could turn in your expert</p> <p>15 report to page 41, please.</p> <p>16 A. Okay. I'm there.</p> <p>17 Q. Now, heading D(1) on page 41 of your</p> <p>18 report, you say that "Claim 11 Is Valid in View of</p> <p>19 Zhang Either Alone Or in Combination With Favrat."</p> <p>20 Do you see that? 14:17:51</p> <p>21 A. What paragraph again, please?</p> <p>22 Q. It's the heading just before</p> <p>23 paragraph 120.</p> <p>24 A. Okay.</p> <p>25 Q. And in this section you're responding to</p>	<p style="text-align: right;">Page 89</p> <p>1 sheet here as 11d, correct.</p> <p>2 Q. And you don't discuss any of the other</p> <p>3 elements of claim 11 besides 11d in paragraphs</p> <p>4 120 to 128; correct?</p> <p>5 A. I'm going by the headings. (a) is what is</p> <p>6 marked as 11a3, and then it goes into claim 12.</p> <p>7 That appears to be correct.</p> <p>8 Q. Let's go back to Figure 2, please.</p> <p>9 A. Of the '362 patent?</p> <p>10 Q. Yes. Of the '362 patent. 14:23:17</p> <p>11 A. Okay. I'm there.</p> <p>12 Q. Do you see, at the right side of Figure 2,</p> <p>13 it says "serial or parallel data interface to</p> <p>14 demodulator"?</p> <p>15 A. So it says "serial or parallel data</p> <p>16 interface to demodulator." Yes. I see that.</p> <p>17 Q. Okay. And there were commonly known</p> <p>18 methods for serial or parallel data interfaces at</p> <p>19 the time of the '362 patent; right?</p> <p>20 A. I was asked to analyze the '362 patent in 14:24:24</p> <p>21 the context of the claim terms. If we want to talk</p> <p>22 about hypotheticals, was there a parallel and</p> <p>23 serial interfaces, yes, there was.</p> <p>24 Claim 12 is not a hypothetical. It is</p> <p>25 just not serial. So the serial interface -- I just</p>

<p style="text-align: right;">Page 142</p> <p>1 subscriber would be again the same. So there  2 wouldn't be any undesired channels, and it's being  3 selected from undesired.  4 BY MR. MEGGS:  5 Q. And then what happens when n is greater  6 than m?  7 MR. COHN: Same objections.  8 THE WITNESS: So n could be any number, and so  9 then it would be some sort of a selection of n is  10 greater than m. 16:42:26  11 MR. MEGGS: No further questions.  12 MR. COHN: Okay. I don't have any questions.  13 I object to that entire redirect as outside of  14 scope of his report and outside of scope of my  15 questioning, but I don't have any questions.  16 MR. MEGGS: Your objection is noted, sir, but  17 I obviously disagree.  18 THE VIDEOGRAPHER: Are we ready to go off the  19 record?  20 MR. COHN: We sure are. 16:42:50  21 THE VIDEOGRAPHER: We are going off the record.  22 The time is 4:42 p m. This concludes today's  23 testimony by Rich Kramer. The total number of  24 media unit used was six and will be retained by  25 Veritext Legal Solutions. Thank you.</p>	<p style="text-align: right;">Page 144</p> <p>1 CONNOR MEGGS  2 connor.meggs@klgates.com  3 August 28, 2023  4 Entropic Communications v Charter Communications, Inc., Et Al  5 8/24/2023, Richard Kramer (#6067726)  6 The above-referenced transcript is available for  7 review.  8 Within the applicable timeframe, the witness should  9 read the testimony to verify its accuracy. If there are  10 any changes, the witness should note those with the  11 reason, on the attached Errata Sheet.  12 The witness should sign the Acknowledgment of  13 Deponent and Errata and return to the deposing attorney.  14 Copies should be sent to all counsel, and to Veritext at  15 cs-ny@veritext.com.  16  17 Return completed errata within 30 days from  18 receipt of testimony.  19 If the witness fails to do so within the time  20 allotted, the transcript may be used as if signed.  21  22 Yours,  23 Veritext Legal Solutions  24  25</p>
<p style="text-align: right;">Page 143</p> <p>1 C E R T I F I C A T E  2  3 I, DEANNA AMORE, a Shorthand Reporter and  4 notary public, within and for the State of  5 Illinois, County of DuPage, do hereby certify:  6 That RICHARD A. KRAMER, the witness whose  7 examination is hereinbefore set forth, was first  8 duly sworn by me and that this transcript of said  9 testimony is a true record of the testimony given  10 by said witness.  11 I further certify that I am not related to  12 any of the parties to this action by blood or  13 marriage, and that I am in no way interested in the  14 outcome of this matter.  15  16 IN WITNESS WHEREOF, I have hereunto set my  17 hand this 28th day of August 2023.  18  19  20   21 Deanna M. Amore, CRR, RPR, CSR  22  23  24  25</p>	<p style="text-align: right;">Page 145</p> <p>1 Entropic Communications v Charter Communications, Inc., Et Al  2 Richard Kramer (#6067726)  3 E R R A T A S H E E T  4 PAGE ____ LINE ____ CHANGE ____  5 ____  6 REASON ____  7 PAGE ____ LINE ____ CHANGE ____  8 ____  9 REASON ____  10 PAGE ____ LINE ____ CHANGE ____  11 ____  12 REASON ____  13 PAGE ____ LINE ____ CHANGE ____  14 ____  15 REASON ____  16 PAGE ____ LINE ____ CHANGE ____  17 ____  18 REASON ____  19 PAGE ____ LINE ____ CHANGE ____  20 ____  21 REASON ____  22 ____  23 ____  24 Richard Kramer Date  25</p>